

1 **R307. Environmental Quality, Air Quality.**

2 **R307-340. ~~[Davis and Salt Lake Counties and]~~ Ozone Nonattainment**
3 **~~and Maintenance Areas:~~ Surface Coating Processes.**

4 **R307-340-1. Purpose.**

5 The purpose of this rule is to establish Reasonably Available
6 Control Technology(RACT), for surface coating operations that are
7 located in an ozone nonattainment or maintenance area. This rule
8 is based on federal control technique guidance documents.
9

10 **R307-340-2. Applicability.**

11 R307-340 applies to the owner or operator who applies surface
12 coating of paper, fabric, vinyl, metal furniture, large appliance,
13 magnet wire, flat wood, miscellaneous metal parts and products,
14 and graphic arts in any ozone nonattainment or maintenance area.
15

16 **R307-340-~~[1]~~3. ~~[Applicability and]~~Definitions.**

17 ~~[(1) R307 325 establishes applicability and general~~
18 ~~requirements for R307 340.~~

19 ~~—(2)—~~The following additional definitions apply to R307-340:

20 "Air Dried Coating" means coatings ~~[which]~~that are dried by
21 the use of air or a forced warm air at temperatures up to 90
22 degrees C (194 degrees F).

23 "Application Area" means the area where the coating is
24 applied by spraying, dipping, or flow coating techniques.

25 "Basecoat" means a primary flat wood coating or coloring of
26 panels and normally should completely hide substrate
27 characteristics.

28 "Capture System" means the equipment (including hoods, ducts,
29 fans, etc.) used to contain, capture, or transport a pollutant to
30 a control device.

31 "Class II Hard Board Paneling Finish" means finishes
32 ~~[which]~~that meet the specifications of voluntary product standards
33 PS-9-73 as approved by the American National Standards Institute.

34 "Clear Coat" means a coating ~~[which]~~that lacks color and
35 opacity.

36 "Coating" means a protective, functional, or decorative film
37 applied in a thin layer to a surface. This term often applies to
38 paints such as lacquers or enamels, but is also used to refer to
39 films applied to paper, plastics, or foil.

40 "Coating Application System" means all operations and
41 equipment ~~[which]~~that applies, conveys, and dries a surface
42 coating, including, but not limited to, spray booths, flow
43 coaters, flash off areas, air dryers and ovens.

44 "Curtain Coating" means the application of a coating material
45 to a wood substrate by means of a free-falling film of coating.

46 "Exterior Single Coat" means the same as topcoat but is
47 applied directly to the metal substrate omitting the primer
48 application.

49 "Extreme Performance Coatings" means coatings designed for
50 harsh exposure or extreme environmental conditions.

51 "Fabric Coating" means the coating or saturation of a textile
52 substrate with a knife, roll or rotogravure coater to impart

1 characteristics that are not initially present, such as strength,
2 stability, water or acid repellency, or appearance.

3 "Filler" means a type of coating used to fill pores, voids,
4 and cracks in wood to provide a smooth surface. It can also be
5 used to accentuate the grain of natural hardwood veneers.

6 "Flat Wood Coating" means the surface coating of any flat
7 wood products.

8 "Flexographic Printing" means the application of works,
9 designs, and pictures to substrate by means of a roll printing
10 technique in which the pattern to be applied is raised above the
11 printing roll and the image carrier is made of rubber or other
12 elastomeric materials.

13 "Groove Coat" means a flat wood coating ~~[which]~~that covers
14 grooves cut into the panel to assure that the grooves are
15 compatible with the final surface color.

16 "Hardwood Plywood" means plywood whose surface layer is a
17 veneer of hardwood.

18 "Ink" means a flat wood coating used to put a decorative
19 design on printed panels. It can also produce special appearances
20 on natural hardwood plywood.

21 "Interior Single Coat" means a single film of coating applied
22 to internal parts of large appliances that are not normally
23 visible to the user.

24 "Knife Coating" means the application of a coating material
25 to a substrate by means of drawing the substrate beneath a blade
26 that spreads the coating evenly over the width of the substrate.

27 "Large Appliances" means doors, cases, lids, panels, and
28 interior support parts of residential and commercial washers,
29 dryers, ranges, refrigerators, freezers, water heaters,
30 dishwashers, trash compactors, air conditioners, and other similar
31 products.

32 "Low Organic Solvent Coating" means coatings ~~[which]~~that
33 contain less organic solvents than the conventional coatings used
34 by industry. Low organic solvent coatings include water-borne,
35 higher-solids, electrodeposition, and powder coatings.

36 "Magnet Wire Coating" means the process of applying coating
37 of electrical insulating varnish or enamel to aluminum or copper
38 wire for use in electrical machinery.

39 "Metal Furniture Coating" means the surface coating of any
40 furniture made of metal or any metal part ~~[which]~~that will be
41 assembled with other metal, wood fabric, plastic, or glass parts
42 to form a furniture piece.

43 "Natural Finish Hardwood Plywood Panels" means panels whose
44 original grain pattern is enhanced by essentially transparent
45 finishes frequently supplemented by fillers and toners.

46 "Packaging Rotogravure Printing" means rotogravure printing
47 upon paper, paper board, metal foil, plastic film, and other
48 substrates, which are, in subsequent operations, formed into
49 packaging products and labels.

50 "Paper Coating" means uniform distribution of coatings put on
51 paper and pressure sensitive tapes regardless of substrate.
52 Related web coating processes on plastic film and decorative

1 coatings on metal foil are included in this definition. Paper
2 coating covers saturation operations as well as coating
3 operations. (Saturation means dipping the web into a bath).

4 "Particle Board" means a manufactured board made of
5 individual particles ~~[which]~~that have been coated with a binder
6 and formed into flat sheets by pressure.

7 "Pressure Head Coating" means the application of a coating
8 material to a wood substrate by means of a pressure head coater
9 where coating material is metered into a pressure head and forced
10 through a calibrated slit between two knives.

11 "Prime Coat" means the first film of coating applied in a
12 two-coat operation.

13 "Primer" means a flat wood coating used to protect the wood
14 from moisture and to provide a good surface for further coating
15 applications.

16 "Printed Interior Panels" means panels whose grain or natural
17 surface is obscured by fillers or basecoats upon which a simulated
18 grain or decorative pattern is printed.

19 "Publication of Rotogravure Printing" means rotogravure
20 printing upon paper ~~[which]~~that is subsequently formed into books,
21 magazines, catalogues, brochures, directories, newspaper
22 supplements, and other types of printed materials.

23 "Roll Coating" means the application of a coating material to
24 a substrate by means of hard rubber or steel rolls.

25 "Roll Printing" means the application of words, designs and
26 pictures to a substrate usually by means of a series of hard
27 rubber or steel rolls each with only partial coverage.

28 "Rotogravure Coating" means the application of a uniform
29 layer of material across the entire width of the web to substrate
30 by means of a roll coating technique in which the pattern to be
31 applied is etched on the coating roll. The coating material is
32 picked up in these recessed areas and is transferred to the
33 substrate.

34 "Rotogravure Printing" means the application of words,
35 designs, and pictures to a substrate by means of a roll printing
36 technique ~~[which]~~that involves a recessed image area in the form
37 of cells.

38 "Sealer" means a type of coating used to seal off substances
39 in the wood ~~[which]~~that may affect subsequent finishes as well as
40 protect the wood from moisture.

41 "Single Coat" means a single film of coating applied directly
42 to the metal substrate omitting the primer application.

43 "Specialty Printing Operations" means all gravure and
44 flexographic operations ~~[which]~~that print a design or image,
45 excluding publication gravure and packaging gravure printing.
46 Specialty printing operations include, among other things,
47 printing on paper cups and plates, patterned gift wrap, wallpaper,
48 and floor coverings.

49 "Stain" means a nonprotective flat wood coating ~~[which]~~that
50 colors the wood surface without obscuring the grain.

51 "Tile Board" means paneling that has a colored waterproof
52 surface coating.

1 "Vinyl Coating" means applying a decorative or protective top
2 coat, or printing on vinyl coated fabric or vinyl sheets.

3
4 **R307-340-[2]4. General Provisions for Volatile Organic Compounds.**

5 ~~[(1) R307-340 applies to Volatile Organic Compounds used for~~
6 ~~surface coating of paper, fabric, vinyl, metal furniture, large~~
7 ~~appliances, magnet wire, flat wood paneling, miscellaneous metal~~
8 ~~parts and products, and graphic arts.]~~

9 ~~[(2)]~~(1) Fugitive emissions. Control techniques and work
10 practices are to be implemented at all times to reduce VOC
11 emissions from fugitive type sources. Control techniques and work
12 practices include:

13 (a) tight fitting covers for open tanks;
14 (b) covered containers for solvent wiping cloths;
15 (c) collection hoods for areas where solvent is used for
16 cleanup; and

17 (d) proper disposal of dirty cleanup solvent.

18 ~~[(3)]~~(2) Record keeping and reporting.

19 (a) The owner or operator of any source subject to R307-340
20 shall maintain:

21 (i) Records detailing all malfunctions affecting control
22 equipment;

23 (ii) Records of all testing conducted under R307-340-~~[13]~~15;

24 (iii) Records of all monitoring conducted under R307-340-
25 ~~[13]~~15; and

26 (iv) Records of the daily use of all paints, stains,
27 lacquers, solvents, and other materials ~~[which]~~that may be a
28 source of VOC emissions.

29 (v) The recording format shall, at a minimum, follow the
30 guidance in EPA-340/1-88-003, "Recordkeeping Guidance Document for
31 Surface Coating Operations and the Graphic Arts Industry", or the
32 most recent EPA guidance, and shall contain all information
33 necessary to determine compliance with emissions limits on a daily
34 basis.

35 (b) The owner or operator shall:

36 (i) Install; operate; and maintain process or control
37 equipment, or both; monitoring instruments or procedures; as
38 necessary to comply with (2)(a) above; and

39 (ii) Maintain, in writing, data or reports, or both,
40 relating to monitoring instruments or procedures to document, upon
41 review, the compliance status of the VOC emission source or
42 control equipment.

43 (c) Copies of all records and reports required by (2)(a) and
44 (b) above shall be retained by the owner or operator for a minimum
45 of two years after the date on which the record was made, and
46 shall be made available to the executive secretary or
47 representative upon verbal or written request.

48 (d) If add-on control equipment is used, in addition to the
49 requirements of R307-340-~~[13]~~15(5), the following information, as
50 determined applicable for each source by the executive secretary,
51 shall be monitored and recorded daily in order to assure
52 continuous compliance. The substitution of continuous recordings

1 of system operation for daily recordings may be allowed by the
2 executive secretary. The required information pertains to the
3 following systems:

4 (i) capture systems: fan power use, duct flow, and duct
5 pressure.

6 (ii) carbon absorbers systems: bed temperature, bed vacuum
7 pressure, pressure at the vacuum pump, accumulated time of
8 operation, concentration of VOC in the outlet gas, and solvent
9 recovery.

10 (iii) refrigeration systems: compressor discharge and
11 suction pressures, condenser fluid temperature, and solvent
12 recovery.

13 (iv) incinerator systems: exhaust gas temperature,
14 temperature rise across a catalytic incinerator bed, flame
15 temperature, and accumulated time of incineration.

16 ~~[(4)]~~(3) Malfunctions, Breakdowns, and Upsets. The owner or
17 operator of a surface coating installation shall maintain a record
18 of malfunctions, breakdowns, and upsets that result in excess VOC
19 emissions. The record shall be kept for a calendar year and shall
20 be submitted to the executive secretary by April 1 of the
21 following year.

22 ~~[(5)]~~(4) Disposal of waste solvents. Waste solvents or
23 waste materials ~~[which] that~~ contain solvents shall be disposed of
24 by recycling, reclaiming or by incineration in an incinerator
25 approved to process hazardous materials or by an alternate means
26 approved by the executive secretary.

27 ~~[(6)]~~(5) Compliance Calculation Procedures.

28 (a) Compliance with R307-340 shall be determined on a daily
29 basis. Sources may request approval for longer times for
30 compliance determination from the executive secretary.

31 (b) Compliance calculation procedures shall follow the
32 guidance of "Procedures for Certifying Quantity of Volatile
33 ~~[e]Organic Compounds Emitted by Paint, Ink, and other Coatings,~~
34 EPA-450/3-84-019, or the most recent EPA guidance. Sources
35 ~~[which] that~~ use add-on controls, or an approved alternative
36 strategy instead of low solvent technology to meet the applicable
37 emission limit, shall meet the equivalent VOC emission limit on
38 the basis of solids applied (lbs. VOC/gallon solids applied, or
39 lbs. VOC/lb. solids applied, for graphic arts sources).

40 41 **R307-340-[3]5. Paper Coating.**

42 (1) R307-340-[3]5 applies to roll, knife rotogravure coaters
43 and drying ovens of paper coating operations.

44 (2) No owner or operator of a paper coating operation
45 subject to R307-340-[3]5 may cause, allow or permit the discharge
46 into the atmosphere of any VOC in excess of 0.35 kilograms per
47 liter of coating (2.9 pounds per gallon), excluding water and
48 solvents exempt from the definition of volatile organic compounds,
49 delivered to the coating application from a paper coating
50 operation.

51 (3) Equivalency calculations for coatings should be
52 performed in units of lbs. VOC/gallon of solid rather than lbs.

VOC/gallon of coating when determining compliance. The equivalent emission limit is 4.8 lbs. VOC/gallon of solid.

(4) The emission limit specified above shall be achieved by:

(a) The application of a low solvent technology coating; or

(b) Incineration, provided that a minimum of 90 percent of non-methane volatile organic compounds (VOC measured as total combustible carbon) ~~which~~ that enter the incinerator are oxidized to carbon dioxide and water; or

(c) Through carbon adsorption provided that there is a minimum of 90% reduction efficiency of captured VOC emissions.

(5) The design, operation, and efficiency of any capture system used in conjunction with (4) above shall be certified in writing by the owner or operator and approved by the executive secretary.

R307-340-[4]6. Fabric and Vinyl Coating.

(1) R307-340-[4]6 applies to roll, knife or rotogravure coaters and drying ovens of fabric and vinyl coating operations.

(2) No owner or operator of a fabric or vinyl coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compounds in excess of:

(a) 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water and solvents exempt from the definition of volatile organic compound, delivered to the coating applicator from a fabric coating line; or

(b) 0.45 kilograms per liter of coating (3.8 pounds per gallon), excluding water and solvents exempt from the definition of volatile organic compound, delivered to the coating applicator from a vinyl coating line.

(3) Equivalency calculations for coatings shall be performed in units of lbs. VOC/gallons of solids rather than lbs. VOC/gallon of coating when determining compliance. The equivalent emission limits shall be 4.8 lbs VOC/gallon solids for fabric coating, and 7.9 lbs VOC/gallon for vinyl coating.

(4) Organosol and plastisol coatings shall not be used to bubble emissions from vinyl printing and topcoating.

(5) The emission limitations specified above shall be achieved by:

(a) The application of a low solvent content coating technology; or

(b) Incineration, provided that a minimum of 90 percent of the non-methane volatile organic compounds (VOC measured as total combustible carbon) ~~which~~ that enter the incinerator are oxidized to carbon dioxide and water; or

(c) Through carbon adsorption provided that there is a minimum of 90 percent reduction efficiency of captured VOC emissions.

(6) The design, operation, and efficiency of any capture system used in conjunction with (5) above shall be certified in writing by the owner or operator and approved by the executive secretary.

R307-340-[5]7. Metal Furniture Coating VOC Emissions.

(1) R307-340-[5]7 applies to the application areas, flash-off areas, and ovens of metal furniture coating lines involved in prime and top-coat or single coat operations.

(2) No owner or operator of a metal furniture coating line subject to this section may cause, allow or permit the discharge into the atmosphere of any volatile organic compound in excess of 0.3 kilograms per liter of coating (3.0 pounds per gallon) excluding water and solvents exempt from the definition of volatile organic compounds, delivered to the coating applicator from prime and topcoat or single coat operations.

(3) Equivalency calculations for coatings shall be performed in units of lbs. VOC/gallon of solid rather than lbs. VOC/gallon of coating when determining compliance. The equivalent emission limit is 5.1 lbs. VOC/gallon solids.

(4) The emission limitation specified above shall be achieved by:

(a) The application of low solvent technology; or

(b) Incineration, provided that a minimum of 90 percent of the non-methane volatile organic compounds (VOC measured as total combustible carbon) ~~which~~that enter the incinerator are oxidized to carbon dioxide and water; or

(c) using water-borne electrodeposition; or

(d) using water-borne spray, dip or flowcoat; or

(e) using powder; or

(f) using higher solids spray; or

(g) carbon adsorption.

(5) The design, operation, and efficiency of any capture system used in conjunction with (4) above shall be certified in writing by the owner or operator and approved by the executive secretary.

R307-340-[6]8. Large Appliance Surface Coating VOC Emissions.

(1) R307-340-[6]8 applies to application areas flash-off areas and ovens of large appliance coating lines involved in prime, single or top coating operations.

(2) No owner or operator of a large appliance coating line subject to this section may cause, allow or permit the discharge to the atmosphere of any volatile organic compounds in excess of 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water and solvents exempt from the definition of volatile organic compound, delivered to the coating applicator from prime, single, or top-coat coating operations.

(3) Equivalency calculations for coatings shall be performed in units of lbs. VOC/gallon of solid rather than lbs. VOC/gallon of coating when determining compliance. The equivalent emission limit is 4.5 lbs. VOC/gallon solids.

(4) The emission limitations specified above shall be achieved by:

(a) The application of low solvent content technology; or

(b) Incineration provided 90 percent of the non-methane

1 volatile organic compounds (VOC measured as total combustible
2 carbon) ~~[which]~~that enter the incinerator are oxidized to carbon
3 dioxide and water; or

4 (c) using water-borne electrodeposition; or

5 (d) using water-borne spray, dip or flowcoat; or

6 (e) using powder; or

7 (f) using higher solids spray; or

8 (g) carbon adsorption.

9 (5) The design, operation, and efficiency or any capture
10 system used in conjunction with (4) above shall be certified in
11 writing by the owner or operator.
12

13 **R307-340-[7]9. Magnet Wire Coating VOC Emissions.**

14 (1) R307-340-[7]9 applies to ovens of magnet wire coating
15 operations.

16 (2) No owner or operator of a magnet wire coating oven
17 subject to this section may cause, allow or permit discharge into
18 the atmosphere of any volatile organic compounds in excess of 0.20
19 kilograms per liter of coating (1.7 pounds per gallon), excluding
20 water and solvents exempt from the definition of volatile organic
21 compound, delivered to the coating applicator from magnet wire
22 coating operations.

23 (3) Equivalency calculations for coatings shall be performed
24 in units of lbs. VOC/gallon of solid rather than lbs. VOC/gallon
25 of coating when determining compliance. The equivalent emission
26 limit is 2.2 lbs. VOC/gallon solids.

27 (4) The emission limitations specified above shall be
28 achieved by:

29 (a) The application of low solvent content coating
30 technology; or

31 (b) Incineration, provided that a minimum of 90 percent of
32 the non-methane volatile organic compounds (VOC measured as total
33 combustible carbon) ~~[which]~~that enter the incinerator are oxidized
34 to carbon dioxide and water; or

35 (5) The design, operation, and efficiency of any capture
36 system used in conjunction with (4)(b) above shall be certified in
37 writing by the owner or operator and approved by the executive
38 secretary.
39

40 **R307-340-[8]10. Flat Wood Coating.**

41 (1) R307-340-[8]10 applies to the application areas of flat
42 wood coating operations involved in but not limited to, filler,
43 sealer, groove coat, primer, stain, basecoat, inks, and topcoat
44 operations.

45 (2) No owner or operator of an interior printed hardwood,
46 plywood, and particle board coating operation may cause, allow or
47 permit discharge to the atmosphere of any organic volatile
48 compound in excess of a weighted average VOC content of 0.20
49 kilograms per liter of coating (1.7 pounds per gallon), excluding
50 water and solvents exempt from the definition of volatile organic
51 compound, delivered to a coating applicator from, but not limited
52 to, filler, sealer, groove coat, primer, stain, basecoat, ink and

1 topcoat operation.

2 (3) No owner or operator of a natural finish hardwood
3 plywood coating operation may cause, allow or permit discharge to
4 the atmosphere any organic volatile compound in excess of a
5 weighted average VOC content of 0.40 kilograms per liter of
6 coating (3.3 pounds per gallon) excluding water and solvents
7 exempt from the definition of volatile organic compound, delivered
8 to a coating applicator from, but not limited to, filler, sealer,
9 groove coat, primer, stain basecoat, ink and topcoat operations.

10 (4) No owner or operator of a Class II hardwood panel finish
11 operation may cause, allow, or permit discharge to the atmosphere
12 of any organic volatile compound in excess of a weighted average
13 VOC content of 0.34 kilograms per liter of coating (2.8 pounds per
14 gallon), excluding water and solvents exempt from the definition
15 of volatile organic compound, delivered to a coating applicator
16 from, but not limited to, filler, sealer, groove coat, primer,
17 stain, basecoat, ink, and topcoat operations.

18 (5) The emission limitations specified above shall be
19 achieved by:

20 (a) The application of low solvent technology; or

21 (b) The application of water-borne coating technology; or

22 (c) The application of ultraviolet-curable coating
23 technology; or.

24 (6) This regulation does not apply to the manufacture of
25 exterior siding, tile board, or particle board used as a furniture
26 component.

27 (7) Equivalency calculations for coatings shall be performed
28 in units of lbs. VOC/gallons of solid rather than lbs. VOC/gallons
29 of coating when determining compliance. The equivalent emission
30 limit for interior printed hardwood, plywood, and particle board
31 coating is 2.2 lbs. VOC/gallon solids. The equivalent emission
32 limit for natural finish hardwood plywood coating shall be 6.0
33 lbs. VOC/gallon solids. The equivalent emission limit for Class
34 II hardwood panel finish operations is 4.5 lbs. VOC/gallon solids.

35
36 **R307-340-[9]11. Miscellaneous Metal Parts and Products VOC**
37 **Emissions.**

38 (1) R307-340-[9]11 applies to the application areas, flash-
39 off areas air and forced air dryers, and ovens used in the surface
40 coating of miscellaneous metal parts and products:

41 (2) Applicable Industries:

42 (a) Large farm machinery (harvesting, fertilizing, planting,
43 tractors, combines, etc.)

44 (b) Small farm machinery (lawn and garden tractors, lawn
45 mowers, rototillers, etc.)

46 (c) Small appliance (fans, mixers, blenders, crock pots,
47 vacuum cleaners, etc.)

48 (d) Commercial machinery (computers, typewriters,
49 calculators, vending machines, etc.)

50 (e) Industrial machinery (pumps, compressors, conveyor
51 components, fans, blowers, transformers, etc.)

52 (f) Fabricated metal products (metal covered doors, frames,

1 trailer frames, etc.)

2 (g) Any other industrial category ~~[which]~~that coats metal
3 parts or products under the standard Industrial Classification
4 Code of major group 33 (primary metal industries), major group 34
5 (fabricated metal products), major group 35 (nonelectric
6 machinery), major group 36 (electrical machinery), major group 37
7 (transportation equipment) major group 38 (miscellaneous
8 instruments), and major group 39 (miscellaneous manufacturing
9 industries).

10 (h) This regulation does not apply to:

11 (i) the surface coating of automobiles and light-duty
12 trucks,

13 (ii) flat metal sheets and strips in the form of rolls or
14 coils,

15 (iii) exterior of airplanes,

16 (iv) automobile refinishing,

17 (v) exterior of marine vessels,

18 (vi) customized top coating of automobiles and trucks if
19 production is less than 35 vehicles per day,

20 (vii) a source whose potential VOC emissions are less than
21 10 tons/year. Potential emissions are based upon design capacity
22 (or maximum production), and 8760 hours/year, before add-on
23 controls. The potential emission level is determined on a plant-
24 wide basis, summing all individual emission sources within the
25 miscellaneous metal parts and products category.

26 (3) No owner or operator of a facility engaged in the
27 surface coating of miscellaneous metal parts and products may
28 cause, allow or permit discharge to the atmosphere of any volatile
29 organic compounds in excess of:

30 (a) 0.52 kilograms per liter (4.3 pounds per gallon) of
31 coating, excluding water and solvents exempt from the definition
32 of volatile organic compound, delivered to a coating applicator
33 that applies clear coating;

34 (b) 0.42 kilograms per liter (3.5 pounds per gallon) of
35 coating, excluding water and solvents exempt from the definition
36 of volatile organic compound, delivered to a coating applicator in
37 a coating application system that utilizes air or forced warm air
38 at temperatures up to 90 degrees C (194 degrees F);

39 (c) 0.42 kilograms per liter (3.5 pounds per gallon) of
40 coating, excluding water and solvents exempt from the definition
41 of volatile organic compound, delivered to a coating applicator
42 that applies extreme performance coatings;

43 (d) 0.36 kilograms per liter (3.0 pounds per gallon) of
44 coating, excluding water and solvents exempt from the definition
45 of volatile organic compound, delivered to a coating applicator
46 for all other coating and coating application systems.

47 (4) Equivalency calculations for coatings shall be performed
48 in units of lbs. VOC/gallon of solid rather than lbs. VOC/gallon
49 of coating when determining compliance. The equivalent emission
50 limit for air dried items is 6.7 lbs. VOC/gallon solids. The
51 equivalent emission limit for clear-coated items is 10.3 lbs.
52 VOC/gallon solids. The equivalent emission limit for extreme

1 performance coatings is 6.7 lbs. VOC/gallon solids. The
2 equivalent emission limit for other coatings and systems is 5.1
3 lbs. VOC/gallon solids.

4 (5) If more than one emission limitation indicated in this
5 section applies to a specific coating, then the least stringent
6 emission limitation shall apply. All volatile organic compound
7 emissions from solvent washing involved in a coating process shall
8 be considered in the emission limitations set forth in R307-340-
9 [9]11(3), unless the solvent is directed into containers that
10 prevent evaporation into the atmosphere.

11 (6) The emission limitations set forth in (3) above shall be
12 achieved by:

13 (a) The application of low solvent technology; or

14 (b) An incineration system ~~[which] that~~ oxidizes a minimum of
15 90 percent of the non-methane volatile organic compounds (VOC
16 measures as total combustible carbon) to carbon dioxide and water.

17 (7) The design, operation, and efficiency of any capture
18 system used in conjunction with (6)(b) above shall be certified in
19 writing by the owner or operator and approved by the executive
20 secretary.

21 22 **R307-340-~~[10]~~12. Graphic Arts.**

23 (1) R307-340-~~[10]~~12 applies to: packaging and publication
24 rotogravure; packaging and publication flexographic; and specialty
25 printing operations employing solvents containing ink and having
26 plant-wide potential emissions of volatile organic compounds (VOC)
27 equal to or greater than 90 megagrams/yr (100 tons/yr). Potential
28 emissions shall be calculated based on uncontrolled emissions
29 operating at design capacity or at maximum production for 8760
30 hours/year. (Solvent shall include that used for dilution of ink
31 and for equipment cleaning.) Machines ~~[which] that~~ have both
32 coating units (application of a uniform layer of material across
33 the entire width of a web) and printing units (formation of words,
34 designs and pictures) shall be considered as performing a printing
35 operation. This rule does not apply to offset lithography or
36 letter press printing ~~[which] that~~ do not use volatile organic
37 compounds.

38 (2) No owner or operator of a packaging and publication
39 rotogravure; packaging and publication flexographic, and specialty
40 printing operations employing solvent containing ink may operate,
41 cause, or allow or permit the operation of a facility unless:

42 (a) The volatile fraction of ink, as it is applied to the
43 substrate, contains 25.0 percent by volume or less of organic
44 solvent and 75.0 percent by volume or more of water; or

45 (b) The ink as it is applied to the substrate, less water,
46 contains 60.0 percent by volume or more nonvolatile material; or

47 (c) The owner or operator installs and operates;

48 (i) A carbon adsorption system ~~[which] that~~ reduces the
49 volatile organic emissions from the capture system by a minimum of
50 90.0 percent by weight; or

51 (ii) An incineration system ~~[which] that~~ oxidizes a minimum
52 of 90.0 percent of the non-methane volatile organic compounds (VOC

1 measured as total combustible carbon) to carbon dioxide and water.

2 (3) A capture system must be used in conjunction with the
3 emission control systems indicated in this section. The design
4 and operation of a capture system must be consistent with good
5 engineering practices and shall be required to provide for an
6 overall reduction in volatile organic compound emissions of at
7 least:

8 (a) 75.0 percent where a publication rotogravure process is
9 employed;

10 (b) 65.0 percent where a packaging rotogravure process is
11 employed; or

12 (c) 60.0 percent where a flexographic printing process is
13 employed.

14
15 **R307-340-~~[11]~~13. Exemptions.**

16 The requirements of R307-340-~~[1]~~3 through ~~[8]~~10 shall not
17 apply to the following:

18 (1) sources whose emissions of volatile organic compounds
19 are not more than 6.8 kilograms (15 pounds) in any 24 hour period,
20 nor more than 1.4 kilograms (3 pounds) in any one (1) hour
21 provided the emission rates are certified. These cutoffs apply to
22 the emissions level on a plant-wide basis, and are determined by
23 summing emissions from all coating operations within the same
24 regulated category.

25 (2) sources used exclusively for chemical or physical
26 analysis or determination of product quality and commercial
27 acceptance provided;

28 (a) the operation of the source is not an integral part of
29 the production process; and

30 (b) the emissions from the source do not exceed 363
31 kilograms (800 pounds) in any one calendar month. These cutoffs
32 apply to the emissions level on a plant-wide basis, and are
33 determined by summing emissions from all coating operations within
34 the same regulated category.

35
36 **R307-340-~~[12]~~14. Capture Systems.**

37 The design, operation and efficiency of any capture system
38 used in conjunction with any emission control system shall be
39 certified in writing by the source owner or operator and approved
40 by the executive secretary. Unless the capture system meets the
41 requirements for a total enclosure, specified in section
42 60.713(b)(5)(i) of 40 CFR Part 60 Subpart SSS, or unless material
43 balance techniques approved by the executive secretary are used to
44 adequately determine overall VOC capture and destruction or
45 recovery efficiency, the efficiency of the capture system will be
46 determined by test methods approved by the executive secretary.
47 Testing for capture efficiency shall be performed on a case-by-
48 case basis as required by the executive secretary, and shall be
49 consistent with EPA guidance. The requirements of R307-340-
50 ~~[2]~~4(3)(d) apply to the capture and control device system. When
51 capture and control device efficiency must be independently
52 determined, the overall VOC emission percent reduction equals

(percent capture efficiency x percent control device efficiency)/100.

R307-340-~~[13]~~15. Testing and Monitoring.

(1) Upon request by the executive secretary, the owner or operator of a volatile organic compound source required to comply with R307-340 shall demonstrate compliance by the method of this section or an alternative method approved by the executive secretary.

(2) Test procedures to determine compliance with R307-340 must be approved by the executive secretary and must utilize one of the following methods or an alternative method approved by the executive secretary or equivalent method.

(a) For surface coatings: EPA Reference Method 24 of 40 CFR Part 60

(b) For add-on control equipment: EPA Reference Methods 1 through 4, 18 and 25, of the 40 CFR Part 60;

(c) EPA 340/1-86-016 "A Guide for Surface Coating Calculations;" and

(d) EPA 450/3-84-019 "Procedures for Certifying Quantity of Volatile organic Compounds Emitted by Paint, Ink and Other Coatings."

(3) All tests shall be made by, or under the direction of, a person qualified by training or experience, or both, in the field of air pollution testing. The executive secretary will evaluate test data submitted.

(4) A person proposing to conduct a volatile organic compound emissions test shall notify the executive secretary of the intent to test not less than 30 days before the proposed initiation of the test. The notification shall contain the information required by, and be in a format approved by, the executive secretary.

(5) If add-on control equipment is used, continuous monitors of the following parameters shall be installed, periodically calibrated, and operated at all times that the associated control equipment is operating:

(a) Exhaust gas temperatures of all incinerators;

(b) Temperature rise across a catalytic incinerator bed;

(c) Breakthrough of VOC on a carbon adsorption unit; and

(d) Any other continuous monitoring or recording device required by the executive secretary.

(6) The executive secretary may accept, instead of the testing required in R307-340-~~[13]~~15, a certification by the manufacturer of the composition of the coatings if supported by actual batch formulation records. The owner or operator of a VOC source required to comply with R307-340 must obtain certification from the coating manufacturers that the test methods used for determination of the VOC content meet the requirements specified in (2) above. The owner or operator shall make this certification readily available to the Division of Air Quality to allow the results to be used in the daily compliance calculations specified in R307-340-~~[2]~~4(6).

(7) The performance of add-on control equipment shall be demonstrated with the required test methods of (2) above at equipment start up and after any major modification to the control equipment. Baseline operating parameters shall be established during the satisfactory (i.e. in-compliance) operation of the control equipment, including operation during all anticipated ranges of process throughput. During subsequent process operation, the owner or operator shall maintain the operating conditions of the add-on controls as close to these baseline conditions as possible. If serious operational problems with an add-on control system are indicated by the daily monitoring required by R307-340-[2]4(3)(d), (such problems may be indicated by changes from baseline conditions), repeat performance tests shall be performed by the owner or operator, and may be required by the executive secretary, as necessary.

(8) To determine compliance with the applicable standards in R307-340, samples shall be taken from the coating as freshly delivered to the reservoir of the coating applicator. All VOC emissions from solvent washing involved in a coating process shall be considered in determining compliance with an emission limit, unless the source owner or operator documents that the VOCs from solvent washing are collected and disposed of in a manner that prevents their evaporation into the atmosphere.

R307-340-16. Alternate Methods of Control.

(1) Any person may apply to the executive secretary for approval of an alternate test method, an alternate method of control, an alternate compliance period, an alternate emission limit, or an alternate monitoring schedule. The application must include a demonstration that the proposed alternate produces an equal or greater air quality benefit than that required by R307-340, or that the alternate test method is equivalent to that required by these rules. The executive secretary shall obtain concurrence from EPA when approving an alternate test method, an alternate method of control, an alternate compliance period, an alternate emission limit, or an alternate monitoring schedule.

(2) Manufacturer's operational specifications, records, and testings of any control system shall use the applicable EPA Reference Methods of 40 CFR Part 60, the most recent EPA test methods, or EPA-approved state methods, to determine the efficiency of the control device. In addition, the owner or operator must meet the applicable requirements of record keeping for any control device. A record of all tests, monitoring, and inspections required by R307-340 shall be maintained by the owner or operator for a minimum of 2 years and shall be made available to the executive secretary or the executive secretary's representative upon request. Any malfunctioning control device shall be repaired within 15 calendar days after it is found by the owner or operator to be malfunctioning, unless otherwise approved by the executive secretary.

(3) For purposes of determining compliance with emission limits, VOCs and nitrogen oxides will be measured by the test

1 methods identified in federal regulation or approved by the
2 executive secretary. Where such a method also inadvertently
3 measures compounds with negligible photochemical reactivity, an
4 owner or operator may exclude these negligibly reactive compounds
5 when determining compliance with an emissions standard.
6

7 **R307-340-16. Compliance Schedule.**

8 All sources within any newly designated nonattainment area
9 for ozone shall be in compliance with this rule within 180 days of
10 the effective date of designation to nonattainment.
11

12 **KEY: air pollution, emission controls, surface coating[*], ozone**
13 **Date of Enactment or Last Substantive Amendment: [~~September 15,~~**
14 **~~1998~~2006**

15 **Notice of Continuation: August 5, 2003**

16 **Authorizing, and Implemented or Interpreted Law: [~~19-2-101,~~ 19-**
17 **2-104(1)(a).**